TREES MAGAZINE

Dangerous Sidewalk Caused By Out-of-Scale Tree (Story on page 13)

Silver Anniversary, N. J. Federation of Shade Tree Commissions, Atlantic City, December 4th and 5th

Dutch Elm Disease — *Wm. Howard Rankin*

Leaf Diseases of Some Shade Trees — *Forrest C. Strong*

Sept. - Oct., 1950 *The Journal of American Arboriculture* Vol. 10—No. 6

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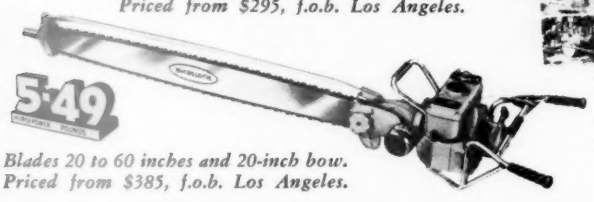

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TREES Magazine is a bi-monthly Journal published at Cleveland, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., P. O. Box 5607, Cleveland, Ohio. Subscription by mail $2 per year: outside United States, $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY With . . . EDW. SCANLON

■ RAY KEEN, the MANHATTAN from KANSAS, is a very LUCKY FELLOW. While BROWSING AROUND a SYRACUSE bookstore, during the recent SHADE TREE CONFERENCE, he UNEARTHED A COPY of the proceedings of the FIFTH N.S.T.C. That is nothing else BUT RAW LUCK—and for a THIN DIME yet.

■ *Now I KNOW how a MONK feels in a MONASTERY. The cubicle THEY CALLED A ROOM, and had the nerve TO CHARGE FOR, at the HOTEL SYRACUSE was no place for a GUY ADDICTED TO CLAUSTROPHOBIA.*

■ A very RECENT REPORT from the U.S.D.A. now establishes TWO CASES of OAK WILT IN OHIO. One at COSHOCTON and the OTHER AT MADISON. Both these points are WIDELY SEPARATED in the state and BOTH ARE AT LEAST 400 MILES from the KNOWN CENTER OF INFECTION. Maybe ANOTHER CHECK wouldn't be AMISS.

■ *I cannot HELP BUT COMMENT here on the NICE GESTURE my ARDENT FRIEND MIKE THE HARTNEY almost made at the N.S.T.C. BANQUET. He sent me a BOTTLE OF CHAMPAGNE. That it happened TO BE EMPTY is hardly WORTH MENTIONING—an oversight by FRIEND MIKE, but THERE'S A GUY for you, he'll GIVE YOU THE SLEEVES out of HIS VEST anytime you NEED THEM.*

■ It is TRITE to say that NEW JERSEY'S LOSS IS NEW YORK'S GAIN, but it is VERY TRUE where it concerns MRS. GARRETT SMITH. Upon MR. SMITH'S retirement shortly, they will move to BROCKPORT, NEW YORK. For 20 years MRS. SMITH has been a TIRELESS WORKER on the PLAINFIELD SHADE TREE COMMISSION, and for every CONSERVATION OR HORTICULTURAL movement for which she was CALLED UPON TO HELP. People like MRS. GARRETT SMITH are TOO FEW IN NUMBER. The shade tree PEOPLE IN NEW JERSEY should entice the GOVERNOR TO SET UP ROAD BLOCKS so SHE CANNOT leave the state SHE HAS SERVED SO NOBLY.

■ *Lucky is STEVE O'ROURKE of MICHIGAN STATE. STEVE is now the head man at "HIDDEN LAKE GARDENS." This is a beauty spot in the IRISH HILLS section of SOUTHERN MICHIGAN that is administered by the College. I'VE KNOWN this place SINCE ITS BEGINNING 25 years or so ago. IT'S BEAUTIFUL. Stop in and SEE IT and STEVE.*

■ WALTER I. MYERS, CITY FORESTER of DETROIT tells me they NOW HAVE DUTCH ELM DISEASE there. TEN CASES this year—HOW MANY NEXT YEAR?

■ *HAROLD GLISSMAN, SUPT. OF GROUNDS at FATHER FLANAGAN'S BOYS TOWN stopped in OUR TOWN for a day. We saw a LOT OF TREES—how strange.*

■ DON'T FORGET to send a CHANGE OF ADDRESS if, as and when you move. HELPS THE BOOKKEEPING DEPARTMENT. Also if you HAVEN'T SUBSCRIBED or RENEWED your sub do so, it HELPS THE TREASURY DEPT.

■ *NORMIE ARMSTRONG sent another pic of his "WEEPING ELM" showing neighboring trees ALL ET UP BY elm leaf beetles. WE'LL HAVE the pic in the next issue. QUITE A CONTRAST.*

■ The SEYMOUR SMITH & SON, INC., Oakville, Conn., are PUTTING OUT a booklet on "HOW TO PRUNE," 10 cents. Might be a GOOD THING to send to YOUR COMPETITORS.

■ *Nice FEATURE STORY in September FORTUNE by our ADVISORY BOARD member EMANUEL FRITZ. It's about the PROGRESS MADE by private lumbering companies in their ADOPTION OF SOUND FORESTRY PRINCIPLES and an admonition to GOVERNMENT FORESTRY to PLAY BALL. IF IT'S BY FRITZ, IT'S GOOD.*

■ If YOU WANT some NICE GLOBE-HEAD ELMS, like the ones I PLANTED on SHAKER BLVD. IN CLEVELAND, drop me a line. They are TOP WORKED on six-foot CHINESE UNDERSTOCK. Very nice. Definitely "Tailored Trees."

■ *GEORGE STADLER is the NEW CITY FORESTER of DENVER. GEORGE replaces EARL SINNAMON who has RESIGNED to go into the TREE AND LANDSCAPE BIZ.*

■ It NEVER RAINS but IT POURS in poor old COLUMBUS, OHIO. Not satisfied with probably the WORST OUTBREAK of PHLOEM NECROSIS in the COUNTRY they now HAVE REPORTED the FIRST OUTBREAK of DUTCH ELM DISEASE THERE. DON SMITH says they EVEN FOUND one in the CHADWICK HOLY OF HOLIES, the OHIO STATE CAMPUS.

■ *GLAD TO SEE from a COLUMBUS DISPATCH that DR. RUSS WHITTEN reports, while the CHINESE ELM is RESISTANT to Dutch elm disease it "ISN'T TOO GOOD A SHADE TREE." Well said but still the UNDER STATEMENT OF THE MONTH. Too bad we CAN'T SPRAY SILVER MAPLES with ELM JUICE so the BAD BEETLES will change THEIR AFFECTIONS.*

■ The MIDWESTERN CHAPTER of the N.S.T.C. will go to the post FEB. 14, 15, 16 at HOTEL LA SALLE. If Sec'y NOEL WYSONG sends us THE PROGRAM we MAY HAVE IT in the DECEMBER ISSUE.

■ *In the LAST ISSUE of the KIWANIS MAGAZINE they carried an INTERESTING STORY about "DEAD TREE DAY" in SPRINGFIELD, ILL. It seems the town COULDN'T FOOT the $300,000 bill to REMOVE 4000 ELMS killed by PHLOEM NECROSIS. A bond issue failed, so they ALL GOT TOGETHER, donated TIME, TRUCKS AND TOOLS, and in TWO WEEKS, NO TREES. They wound up HOLDING the first annual "WOODCUTTER'S BALL"—All in all CUTE, but a SAD COMMENTARY on misdirected CIVIC PRIDE.*

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Vol. 10 Bi-Monthly No. 6

Subscription Price $2.00 Per Year
(Foreign $2.50) 35 Cents Per Copy
TREES MAGAZINE
Box 5607, Cleveland, Ohio

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

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■ That lucky guy RAY KEEN, KANSAS STATE COLLEGE, who FOUND THE 5th PROCEEDINGS of the N.S.T.C. now FINDS HIMSELF short of the 7th, 8th and 20th PROCEEDINGS. Anyone who CAN HELP should contact him—MANHATTAN, KAN.

■ *The MAD RUSSIAN TIM JANOZKO has promised me a real dinner of RUSSIAN STUFFED CABBAGE AND KOLBOSI on my first trip to STRATFORD, CONN. O.K., but don't forget the VODKA MALIK.*

■ The NEW PRESIDENT of the AMERICAN ASSOCIATION OF NURSERYMEN is WAYNE FERRIS of Iowa.

■ *Death claimed our GOOD FRIEND "DOC" BLUME of HOUSTON, TEXAS, just shortly after WE WENT TO PRESS last issue. DOC was MISSED at the SHADE TREE CONFERENCE and will always BE MISSED. He was one of the real GOOD GUYS in this business.*

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GREEN-up AMERICA

September-October, 1950 **Journal of the National Arborist Association** Vol. 10—No. 6

EDWARD H. SCANLON, Editor
Box 5607, Cleveland, Ohio
Phone ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless: *a country without trees is hopeless*"

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Out On A Limb

UTILITIES CONDUCT "DEATH MARCH" ON TREES

The utilities who string wires, occasionally bury them, but generally manage to make hideous any landscape over which they pass, or trespass, should be reminded that they too, as well as every other public agency or individual citizen has an obligation to his or their community that goes beyond the avaricious stringing of wires to furnish light, power or telephones.

The attitude of these corporations in the past few years, particularly since the war, has seemed to be "the hell with everything—the wire is the thing"—Maybe so but we reserve the right to think they are running slam bang into a beautiful headache.

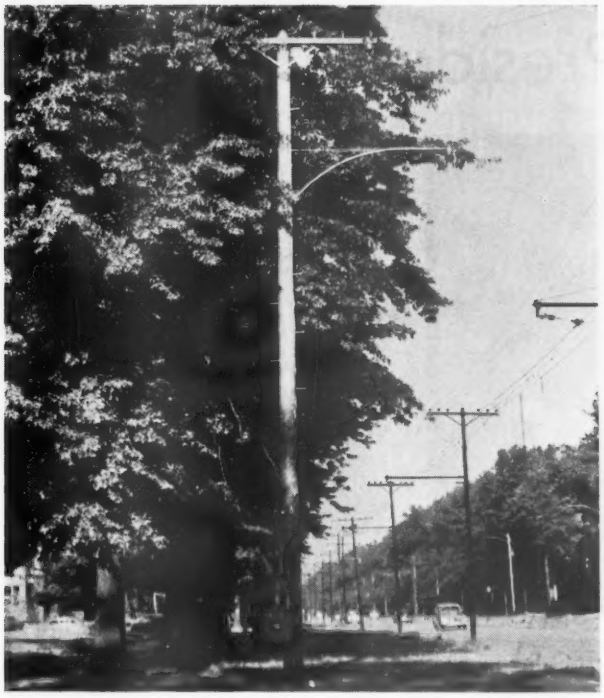
Of course we refer specifically to the wanton destruction of precious shade trees by these "servitors to mankind"—oh brother.

The pictures on the next page illustrate one of the worst cases of property destruction we have seen in twenty-five years of association with trees. It occurred in Lakewood, a city adjacent to Cleveland. For years this street Clifton Boulevard has been a traffic bottleneck and two years ago the portion of the street that extends into Cleveland was widened—no tree destruction occurred there, even tho street lights and trackless trolley poles occupy the "treelawn" with large elms and some sycamores.

In Lakewood the utility company ran wild. The trees shown were beautiful eighty foot red oaks spaced at fifty feet. It could have been the most magnificent avenue of trees in America—today it's a horrible mess, because the *trees were butchered to fit the wire installation.* It no doubt never occurred to these people to fit their poles and wires into an harmonious pattern with this magnificent and priceless civic asset. This kind of thinking is difficult to understand, and it is also impossible to understand why city officials and the public take such a dilatory attitude toward crimes of this nature. Sometimes we wonder who is nuts.

The utility people claimed the work was being done by "experts"—the only resemblance to expert work was in the painting of cuts, many of which were poorly made. Here it seems the tree expert companies would have an obligation, if not to the public, at least to their conscience and they should attempt to advise the utility people, for whom they work, that the practice of ignoring everything in the interest of erecting horrible monstrosities in the name of progress, should stop. Certainly tree expert companies who condone such practices, or are afraid they will lose the utility tree butchering business, are remiss, seriously so in continuing such atrocities.

We know that when utilities decide on a new installation they consider the site from one aspect alone. They give no thought to the trees, or anything else that stands in their way. They definitely have one-track minds. This should be changed and it is up to organizations like the Garden Clubs of America, the Business Mens' Garden Clubs and other such civic organizations to roll up their sleeves and stop this mad rush of barbarian destruction.



Here we see where poles were placed prior to the butchering that obviously is necessary to mold the trees around the number one monstrosity of American streets and highways. The poles in the background are the original lines before widening of the street. We need poles and trees but we need to use common sense where they must live together.

This is how the magnificent red oaks on Clifton Blvd., Lakewood, Ohio were "tailored" to fit the huge poles that one-track planning deemed necessary. An intelligent study of this situation by city officials, utility people and tree company could have resulted in proper pole placement and size, and beautiful trees. Old poles on right.

☆

Heavy foliage on right is beetle-resistant elm. Note defoliated trees in background.

☆

Dutch Elm Disease Makes New Headway

The dreaded Dutch elm disease has taken its toll in 15 new towns of Massachusetts. This report is from Malcolm A. McKenzie, director of the Shade Tree Laboratories at the University of Massachusetts in Amherst, who is aiding in the fight to save Massachusetts elms.

Mr. McKenzie declares that 15 towns not known to be affected previously have been reported since July 11. This makes a total of 201 towns in Massachusetts where diseased trees have been found. The total of trees is 7,480. Eleven counties of the twelve on the mainland have reported the disease. Barnstable and the island counties of Dukes and Nantucket so far are known to be free.

The greatest handicap in checking the spread of this disease, declares McKenzie, is failure to detect the disease before serious spread has occurred. A laboratory test, however, is necessary to determine whether the fungus which causes the disease is present. Instructions on how to take samples for mailing to the laboratory for the test may be obtained from your town tree warden or direct from the laboratory at the University.

The new towns reporting the Dutch elm disease are Athol, Chelsea, Concord, East Bridgewater, Lincoln, Lynnfield, Mendon, Milford, Millis, Peabody, Somerville, Somerset, Upton, Watertown, and Winthrop.

* * * *

Issued by the Extension Service in furtherance of Acts of May 8 and June 30, 1914, Willard A. Munson, director, University of Massachusetts, United States Department of Agriculture, and County Extension Services cooperating.

Armstrongs Elm Again

When you published the picture of the "weeping" elm which I sent you, you appeared to doubt the truth of my statement that canker worms do not eat the foliage of this tree. (Ed. Note: Maybe it's not an Elm, Normie).

Unfortunately (for the spraymen) the canker worm was not with us in great numbers this year. The elm leaf-beetles, however, did show up. They didn't seem to like this tree either.

A picture is enclosed to illustrate.

Picture contrasts part of the "weeping" tree with the next three trees on its other side.

There are enough maples, oaks, ashes and willows around to give the countryside a generally green appearance but all elms, with the one exception, are defoliated from 25% to almost 100%. When canker worms are numerous the contrast is even greater.

Can Irish match this one?

Yours,

Norm.

Norman Armstrong, Inc.

(Ed's Note: This tree should be presented to the Conference Tree Selection program and a request made of the U.S.D.A. to study WHY this tree is resistant to the insects mentioned. Maybe the Scolytus beetle also would faint at the sight of it—could be the answer).

Ed. Higgins, New President, N. S. T. C.

By Noel Wysong

The twenty-sixth annual convention of the National Shade Tree Conference, held August 21 to 25, at the Hotel Syracuse, Syracuse, N. Y., was successful in the number of persons attending and outstanding for the interest they displayed in every session of the meeting.

Four hundred and eighty-eight members and guests registered for the meeting. Those attending represented tree service companies, municipalities, educational institutions and other agencies interested in arboriculture.

Election Results

At the business meeting officers for the coming year were elected as follows: President, Edward W. Higgins, of the Frost & Higgins Co., Arlington, Mass.; vice-president, Noel B. Wysong, chief forester, forest preserve district of Cook county, River Forest, Ill.; secretary-treasurer, L. C. Chadwick. department of horticulture, Ohio State University, Columbus, O.; editor, Paul E. Tilford, executive secretary, National Arborist Association, Wooster, O.

Elected to the executive committee for a 2-year term were Winston E. Parker, arborist, Moorestown, N. J.; Karl Dressel, department of forestry, Michigan State College, East Lansing, Mich., and Roger F. Sohner, Sohner Tree Service, San Anselmo, Calif. Herbert O. Drennan, Carolina Power & Light Co., Raleigh, N. C., was elected to the executive committee for a one-year term to fill the vacancy created by the death of C. M. Blume, of Houston, Tex. John D. Loizeaux, Burnbrae Tree Service, Towson, Md., and Leslie S. Mayne, arborist, San Mateo, Calif., were elected to the membership committee for terms of three years each. Henry T. Skinner, of Morris Arboretum, Philadelphia, Pa., was elected to the nomenclature and standards committee for three years.

Opening Session

Tuesday morning, President Ray R. Hirt, plant pathologist of the New York State College of Forestry, Syracuse, presided and introduced the Rev. Wilbur B. Smith, chapel counselor at Syracuse University, who delivered a brief but inspirational invocation. Following a welcome by Alfred W. Haight, president of the common council of Syracuse,

Edward W. Higgins, newly-elected President, 27th National Shade Tree Conference.

President Hirt introduced Dr. J. S. Illick, dean of the New York State College of Forestry. Dean Illick brought greetings from the college and briefly described the research work in shade tree preservation that is being conducted by the various departments at the college.

In presenting "Another View of Arboriculture," Norman Armstrong, arborist, White Plains, N. Y., used slides of various cartoons depicting cavity work, planting, tree removal and other arboricultural activities. The cartoons were humorous, but, as Mr. Armstrong explained, such cartoons often represent the viewpoint of the general public toward any profession or trade. He warned that all arboricultural activities must be conducted in an ethical, businesslike and courteous manner in order to increase the stature of the profession in the eyes of the public.

Noel Wysong, new Vice President 27th National Shade Tree Conference.

Trees for Cities

Prof. George J. Albrecht, head of the department of landscape and recreational management, New York State College of Forestry, discussed "Trees and Cities of Tomorrow." He said that city trees must be thought of not by themselves but as a part of a big, general scheme composed of streets, sidewalks, houses urban community. City planners and those who design street-planting plans must learn to think in broad planting terms and to choose trees that will be in harmony with the width of the streets and the size of adjoining buildings; that will add variety and interest to streets, and that will not require excessive maintenance.

Plantings in the city of tomorrow might include such features as more liberal use of shrubs, fewer but better quality trees, group plantings and single specimens, particularly along short streets, as opposed to row plantings now commonly seen in cities. Trees that are smaller at maturity than the presently favored species are advocated for use on streets of average width, narrow parkways and formal plantings. Larger species, even such trees as horse chestnut and sweet gum that are ordinarily considered undesirable street trees, because their flowers, leaves and fruit cause too much litter on the street, might be planted along broad streets with wide parkways where height and spread are not objectionable and litter can be easily raked.

Commenting on present conditions, Professor Albrecht said that many cities were overplanted, often with undesirable species. To rectify this situation, city foresters were advised to attempt to preserve only the best of such plantings and to develop new plantings more suitable to city conditions. Trees that are to be used on city streets should be developed from youth for that purpose, with special attention being given to pruning while the trees are still in the nursery. Professor Albrecht urged that more restraint be used in city planting; spacing should be such that sunlight and air are admitted freely to the street.

2, 4-D Injury

"Tree men recently have been faced with another new tree ailment, injury

(Continued on Page 8)

Key List for Caricatures of 26th Annual Shade Tree Conference, Opposite Page, by Harry Wood

1. L. C. Chadwick; 2. Paul Tilford; 3. Ray Hirt; 4. Noel Wysong; 5. Larry Wachtel; 6. Frank Karpick; 7. Jim Kuntz; 8. Albert Hartzell; 9. Karl Kuemmerling; 10. Al Meserve; 11. Martin Chaisson; 12. Ed Higgins; 13. Karl Dressel; 14. O. N. Liming; 15. Walter Morrow; 16. Jack Kenealy; 17. Bill Hawkey; 18. Bill Erdman; 19. Vance Shield; 20. Steve O'Rourke; 21. Dick Ferrara; 22. Jim Shafer; 24. Mike Hartney; 25. Frank Pipal; 26. Bill Beaudry; 27. Red Jacobs; 28. Orville Spicer; 29. Bob Weakley; 30. Charley Cavanaugh; 31. Bert Sanders; 32. Rudy Lohmann; 33. Harry Turner; 34. Riley Stevens; 35. Charles Irish, Jr.; 36. Charles Irish, Sr.; 37. H. F. Bosenberg; 38. Oscar Warner; 39. Paul Soergel; 40. Norm Armstrong; 41. Sophora Japonica (Ed Scanlon); 42. Frank Hanbury; 43. Harry Wood.

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Banquet 26th National Shade Tree Conference, Grand Ballroom, Hotel Syracuse.

resulting from the use of 2, 4-D," said Homer L. Jacobs, research department, Davey Tree Expert Co., Kent, O., who discussed "2, 4-D—Friend or Foe."

"It is a double-edged tool, a useful horticultural tool, because of its selectivity in the control of undesirable vegetation, but one that can cause great injury to trees, shrubs and other plants through careless use, overuse or misuse." Mentioning the general types of 2, 4-D commonly used, sodium salts, amine salts and esters, Mr. Jacobs said injury to trees and shrubs might occur from direct splash or mist drift, which can be seen and prevented; vapor drift, resulting from the use of highly volatile compounds, and root absorption through the soil, resulting from overuse or too frequent applications of 2, 4-D on the soil surface.

Symptoms of 2, 4-D injury on trees and shrubs were described as ranging from slight distortion of the leaves and leaf petioles to browning of foliage and death of the affected plant. Usually the leaves become thickened and leathery, may be undersized and yellowish or chlorotic in appearance and tend to roll upward or downward, often with a decided cupping of the leaf tip. Depending upon the severity of injury, the twigs become twisted and misshapen. Symptoms are generally more prounounced if injury occurs just prior to a period of rapid growth. When 2, 4-D is absorbed through the roots, injury may not become apparent until the following year when leaf and twig deformations and other typical symptoms appear.

Oak Wilt Disease

Prof. James E. Kunz, division of forest pathology, University of Wisconsin, Madison, gave an outstanding talk about "Oak Wilt." Briefly tracing the history of the disease, he stated that early records indicate oak wilt was present in Wisconsin at least twenty years ago and increasing incidence of the disease brought it to the attention of pathologists at the University of Wisconsin, the Wisconsin conservation department and the United States Forest Products Laboratory, who determined through research that the fungus, Chalara quercina, was the casual agent of the disease. Since that time, oak wilt has been found scattered throughout southern Wisconsin, southeastern Minnesota, eastern Iowa, Illinois, Missouri and eastern Indiana.

At least twenty-eight species of native oak are known to be susceptible to the disease, Dr. Kunz stated, and none have been found to be immune. He separated the oaks into two classes, the red oaks and the white oaks, and then described the symptoms of oak wilt as follows: In the red oaks the first symptom is a slight curling and paling of the older leaves, usually near the top of the tree or toward the tips of the upper lateral branches. The leaves gradually become bronze to brown progressively, from the tip or margins toward the base. The base of the leaf petiole becomes swollen and darkens in color. The

leaves may fall during any of the symptom stages; often complete defoliation and death of the tree occurs within a few weeks after the first symptom of the disease has appeared. In the white oak group leaf symptoms are more localized than in the red oaks, and it is seldom that an entire tree wilts and dies during a single season. Twigs with dead or dying leaves may be scattered throughout the crown, with some branches remaining seemingly healthy. An infected white oak may live for several years, dying progressively from the top downward. Brown to black streaking is generally found in the tissues just under the bark of infected branches.

It has not yet been determined how the disease spreads from an infected tree to distant oaks, but jumps of several hundred yards or more are known to occur. Locally, the disease can spread through natural root grafting between like species, Dr. Kunz stated, although root grafts between oaks of different species have not been known to occur. Research that established the fact that root grafting is prevalent also suggested that a symbiotical relationship, instead of one of constant competition, may exist between closely adjacent trees of like species in which the root system of one may contribute to the growth of the other.

No method of controlling its spreading to distant areas, other than the practice of sanitation measures, is known, Dr. Kunz said.

Dutch Elm Disease Research

Dr. Curtis May, of the division of forest pathology, bureau of plant industry, United States Department of Agriculture, Beltsville, Md., presented a report on "Current Research on Dutch Elm Disease," describing several projects now in progress at the research stations and giving the results obtained to date. Various chemical compounds including carolate and oxyquinoline benzoate have been tried in experimental tests directed toward prevention or control of the Dutch elm disease, but none has been successful. DDT sprays applied to control the vector, the elm bark beetle, appear to be the most promising.

In a brief commentary on oak wilt, Dr. May said that just prior to the meeting he had received reports from the U. S. D. A. station, at Columbia, Mo., confirming the finding of oak wilt disease in one county in Arkansas and also in an area some thirty-five miles east of Cleveland, O.

Cytospora Canker

Dr. J. C. Carter, plant pathologist, Illinois State Natural History Survey, Urbana, Ill., discussed "Cystospora Canker" and used natural color slides to illustrate his remarks and to show the manner in which the disease affects various species of trees. Species likely to become infected with this fungus disease include poplar, oak, Chinese chestnut, elm, mulberry, spruce, hemlock and others.

Importance of Soil Aeration

"Because one-third to one-half of the volume of a tree is out of sight below the surface of the soil, it is, therefore, generally out of mind," said Dr. Paul J. Kramer, of the department of botany, Duke University, Durham, N. C., in his talk on the subject of "Soil Aeration and Tree Growth."

Dr. Kramer mentioned that, to grow successfully, a tree must have an adequate root system, which is not possible unless the soil is well aerated and contains at all times a sufficient supply of oxygen. Tree roots develop properly when the oxygen content of the soil is approximately twenty per cent, although they will grow to some extent when the oxygen content is reduced to ten per cent and will survive even when it drops to three per cent.

New Small Trees

John L. Creech, associate horticulturist, division of plant exploration and introduction, U. S. D. A., Beltsville, Md., discussed "Some Promising New Small Trees," showed slides in natural color of a number of varieties and described the growth habits of each. Trees that at maturity exceed thirty-five feet in height were not considered, nor were those that are restricted in use, because of exacting soil or climatic requirements. Interest in small trees is increasing, because of the greater number of smaller homes and the increasing need for small trees along city streets and in parks. Propagation of small-growing varieties has been retarded. Mr. Creech said, because of the difficulty nurserymen experience in finding a market for such species. He urged city foresters and park men to promote more interest in the smaller, more desirable varieties and to help educate the public as to the desirability of small trees for small homes and create a better market for such varieties.

Controlling Mites

"Mites on Woody Plants and Their Control" was the subject of a paper presented by Dr. J. G. Matthysse and John Naegele, of the department of entomology, Cornell University, Ithaca, N. Y. Mite populations, said Dr. Matthysse, usually build up in the early summer, decline during the middle of the summer and increase again in the fall. For best results controls should be applied when the population is in the process of building up, instead of during midsummer, even though at that time the mites may seem more numerous.

Discussions on Trees

A symposium on shade trees, their use, planting, maintenance and pest control, was conducted by Dr. J. G. Matthysse; Dr. D. S. Welch, of the department of plant pathology, Cornell University, and Jake Gerling, of the department of parks, Rochester, N. Y. Five tree species—elm, London plane, Norway maple, copper beech and the Japanese pagoda tree, Sophora japonica—were discussed from the standpoints of horticultural use, insect enemies and diseases. Slides of these trees and other species found particularly desirable in the parks at Rochester were shown by Mr. Gerling. Many of the trees held in highest esteem in the Rochester park system, Mr. Gerling said, are small-growing species. He advocated greater use of such species in parks, and he added, "Knowledge of small trees will create demand for them; upon this demand, the nurserymen will propagate these species."

Sessions for Foresters

A meeting of city foresters, park superintendents and others interested in public area tree management problems was held Wednesday evening and attended by approximately 150 members of the conference. With Carl Fenner, assistant city forester, Lansing Mich.., serving as chairman and mediator during the 3-hour session, management policies, city ordinances, salaries of workmen in various grades of jobs, trees suitable for use in cities and other problems of concern to city foresters were discussed. A film illustrating the versatility and economic advantages of chain saws was shown.

A special session for utility foresters was held Thursday morning, with some forty members attending. Karl Kuemmerling, forester to public utilities, Canton, O., served as discussion leader, and the question of forming a subsection composed of conference members interested in public utilities work was considered and approved. Prof. Karl Dressel, of the department of forestry, Michigan State College, East Lansing, was elected permanent secretary of the group.

Exhibits and Demonstrations

Interesting educational exhibits were displayed in the exhibit hall of the New York State College of Forestry. These included cross sections of trees, insect and disease mounts, tools used in forestry work and many other items. A cleverly planned and well executed demonstration to illustrate safety practices in tree climbing, tool handling, chopping and tree-felling work was staged by Mr. Kuemmerling and members of his staff. Proper methods of tree spraying were demonstrated under the direction of Norman Armstrong.

Through the cooperation of fifteen manufacturing firms and their distributors, tools and equipment used in arboricultural work were demonstrated Wednesday afternoon in Thornden park, Syracuse. In addition, various tools, supplies and materials representing the products of thirty manufacturing firms were displayed at Hotel Syracuse.

Leaf Diseases of Some Shade Trees*

By Forrest C. Strong
Department of Botany
Michigan State College
East Lansing, Michigan

I. PARASITIC DISEASES

Leaf diseases and injuries of all plants, herbaceous and woody are very numerous and of constant occurrence. These injuries to the basic food manufacturing organ of the plant, namely the sugar making factory may be and often are extensive. The casual agents range from mechanical injuries, such as, wind whip and frost injury of young leaves, to the attacks by parasitic fungi which may be illustrated by late blight of potato, apple scab, or sycamore anthracnose.

Tangible and measurable injury to economic crop plants, such as potatoes, apple trees, wheat and cotton can be determined directly by the reduction in quality and quantity of the product in the current year. It cannot be so measured for the shade trees because the products of these are shade, ornament, and beauty, which are not easily measured in terms of money losses. Leaf disease injuries are even more difficult to measure in forest trees because so many years elapse before the harvest of timber, pulp or other forest products is made and many other factors enter into the picture during the years to make assessment of losses impossible.

Many times injuries to the leaves of shade trees, whether by environmental conditions or by parasites are great enough to cause such obvious losses either in the shade produced, or in the appearance of the tree, or in reducing its vigor as to require attention. Time, effort, and money must be expended to aid the tree to retain its pristine qualities.

To apply remedial measures effectively, it is necessary to know what is causing the injury or the disease. In fact it is important to know the causes of as many of these diseases as is possible in order that their relative seriousness may be evaluated.

Selection and application of protective, preventive, remedial or other "control" measures depends on the recognition of the cause of the leaf injury; a determination of its relative importance and if effective treatments are possible.

Because of the type of plant, namely the shade tree and its intangible value, the knowledge concerning effective treatments for the prevention or control of leaf diseases are, at this time, more or less in the form of empirical recommendations, in contrast to the more precise recommendations which have been worked out through the years for the control of leaf diseases in the orchard trees and field and vegetable crop plants such as, apples, cherries, potatoes and tomatoes.

Rankin, Stewart, Tehon, Carter and others have reported results of the use of fungicides for the control of parasitic diseases affecting the leaves of shade trees. Chadwick, Jacobs, and others have reported results in the control of chlorosis of oak leaves caused by non-parasitic factors. But the endeavors on the part of investigators working with shade trees is small compared with extensive work on orchard tree leaf diseases done by a host of workers through the years. Because of this fact, it is often necessary to borrow information and apply it arbitrarily or empirically to the control of shade tree leaf diseases.

Let us take a few diseases for example and look into diagnosis of them and the why and how of the "control" measures recommended.

Elm leaf spot is caused by a fungus, *Gnomonia ulmea*. This fungus grows in the leaf tissue and produces small distinct lesions in the form of spots, which soon develop a black crust-like appearance and range in size from tiny pin point dots to about ⅛ inch in diameter. They are easily seen and identified. As many as 300 or more spots may be counted on heavily infected leaves. When the leaves fall in autumn the fungus remains alive and in fact grows some throughout the winter while the dead elm leaves lie on the ground. By spring, sporulating bodies have matured which are ready to start ejecting spores into the air at the time when new leaves on the elm trees are emerging from the buds. Convection currents and winds carry the fungus spores along through the air. Those that settle on new tender leaf surfaces germinate and send out germ tubes which penetrate the leaf tissue and produce the first leaf spot lesions of the year. In a few weeks more spores are produced in these primary or first run lesions, then more lesions appear on the same leaves, adjacent leaves, and on leaves of nearby trees. By August, on susceptible trees and with favoring wet conditions of weather, there is such a great number of lesions or leaf spots that leaf injury is considerable, and severe defoliation may occur. Fortunately for the elm trees, these heavy infections develop late in the season in contrast to apple scab which in favorable seasons may cause severe injury early in June.

With this understanding of the cause; that it may develop an enormous number of lesions by late summer; that the parasitic fungus does not die with the fall of the leaves, but remains alive through the winter and develops a crop of spores ready to regenerate itself when new elm leaves are produced from the buds in the spring, selection of measures to prevent or at least reduce the number of leaf spots can be made and carried out. In this case a suitable fungicide must be applied to the new leaf surfaces to kill the parasite. The fungicide MUST be applied before the spores settle on the leaf surfaces. This is a protective or preventive type of disease control. It is imperative that the leaf surfaces be covered before the spores arrive, since it is almost impossible to kill the fungus once it has entered the leaf tissues. Since the leaves at this time are expanding steadily and exposing new surfaces not covered by the first application of the fungicide, then more applications must be made to keep the leaf surfaces well covered until the leaves reach mature size. Further these chemicals which are toxic to fungi, weather and oxidize on exposure to the air and become innocuous and must be replaced by fresh toxic chemicals.

With this information and understanding we set up the plan of applying the fungicide, the so-called spray schedule. The first application is made just as green leaf tissues appears in the opening buds, a second application must be made in from 7 to 14 days to cover new leaf tissue, and to replace expended fungicidal chemicals used, a third application is made in 7 to 14 days after the second application. If a 7 day schedule is being followed, and in the apple orchard this is often done, a fourth and a fifth application is needed before the leaves reach mature size. In shade tree work, three applications at 14 day intervals is generally considered sufficient to prevent serious injury late in the season by heavy leaf spot infection. In a spring when there is much wet weather there may be excessive loss of fungicide by washing off from the leaf surfaces and also fungus sporulation is greater. In such years a fourth application, even at the 14 day interval is advisable.

Much of the above planning is borrowed from the orchardist but we know enough from experience with shade trees that three applications at 14 day intervals will prevent a heavy total infection by the end of August.

What is the suitable fungicide? From work done in the control of shade tree leaf diseases we know that Bordeaux

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*As presented at the Short Course for Arborists, Landscape Gardeners and Nurserymen, Ohio State University, January 23, 1950.

Dutch Elm Disease

By W. Howard Rankin,
Department of Agriculture and Markets
State of New York

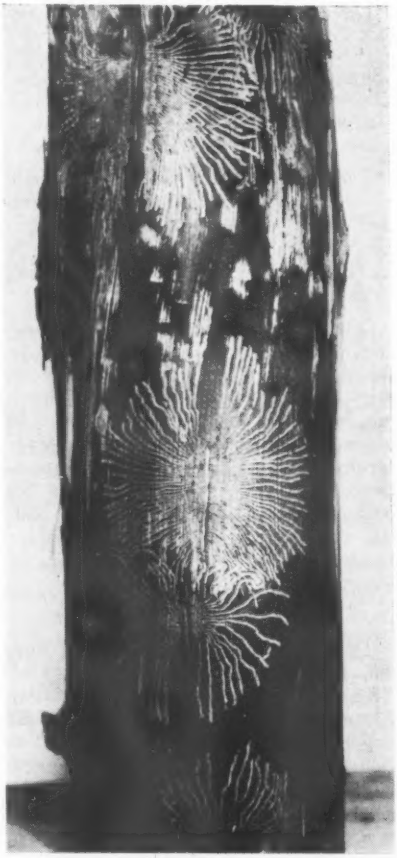
Alarm concerning the future of the elm trees of the cities, village and the countryside of the northeastern states dates back to 1933. The New York State Department of Agriculture and Markets assumed a leading role with the adjoining states and the Federal Government to do what was possible. The New York State College of Agriculture provided a vigorous and effective research staff. Eradication measures failed not because of faulty or inadequate application, but because the disease spreads into new territory hidden away in dead elm wood. Diseased elms do not appear until several years after the fungus is well established in an area.

Since 1934, the disease has gradually moved northward and has become established in the Hudson Valley counties, recently reaching Lake George and Warrensburg. Also, from a separate center of foreign origin, discovered in 1939 near Binghamton, the disease in less dangerous form has moved northward throughout the east-central counties into the Adirondack mountains. From a third center in Quebec Province, Canada, the disease is expected soon to appear in the northern New York counties.

There are no mysteries about this disease that have to be solved before it can be controlled. The basic facts were worked out several years ago. The disease is favored by the environment of the village and city. Elms for shade and ornament under lawn, park and street conditions are more vulnerable than their rural and woodland cousins. After the first elm dies of this disease in any locality the disease is there to stay. Dead elm wood is the only place from which the infection of healthy elms can come. Elms less than 200 feet away from the dead wood are particularly endangered; elms up to 500 feet are occasionally infected, but beyond that distance only very rarely. The season for the majority of the infections from dead elm wood is in the spring—April to early July. In late summer and fall the danger is slight.

Elm wood is a source of infection during the few months following its death. The dying or broken branch in a tree, and cut elm wood on the ground, are equally as dangerous as an elm killed by the disease. Actually it is only the bark of such wood that breeds the fungus and the bark beetles that carry it. These bark beetles seek out such wood as an abode. No damages to living elms would result from the family life of these beetles were it not for the fact that they like a change of diet. Each new generation of adult winged parent beetles feeds on the small succulent twigs of elms for a few days while out seeking a new home. Luckily they are not very efficient in placing the fungus they carry on their bodies in just the right place at the right time. One of several hundred beetles that feed on a given tree actually causes the infection.

Dutch elm disease fungus growing in phloem tissue.



Galleries of Scolytus mulistriatus, insect vector of the Dutch elm disease.

An infected elm may or may not show any signs of the disease the first summer. The destructive effect is usually postponed until the following spring or summer, or even for two years after infection. Very few trees that once show signs of the disease can be saved by pruning, watering or fertilizing.

The Department's efforts have been advisory since 1940. The objective has been to keep the tree owner fully aware of conditions in his neighborhood and recommend action. To this end exploratory surveys are made to determine the progress of the disease into new territory. Within the area where the disease is established more intensive surveys are made annually to locate new outbreaks and dangerous dead elm wood accumulations. These inspections are made without request in all cities, villages and other residential and institutional centers where elms have a recognizable civic value. Recommendations are made direct to the owners, both private and public, so they may act before spread occurs. In some cities, villages and neighborhoods these recommendations are sponsored by individuals or groups as a civic service.

Few cities and villages, so far, have suffered excessive elm losses through neglect or non-interest. Many others, however, have not kept losses as low as was possible. This has been due to only partial annual clean-up of the tree and wood location listed as essential hazards by the Department's surveys. Experience has shown that when a 90 per cent clean-up of listed dead material is attained annually, the disease is suppressed to minor proportions.

Examples from among the places that received their first impact from the disease in 1933 and 1934 show what can be accomplished. In 1934, Larchmont lost 10 elms killed by the disease; Pelham, Pelham Manor and North Pelham lost 10 and the city of Mount Vernon lost 66. In the 15 years since 1933 the clean-up of recommended dead trees and wood has averaged 93, 86 and 90 per cent respectively. As a result of these precautions, Larchmont in 15 years has lost in elms killed by the disease a total of only four per cent of

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NAA NEWS

By PAUL E. TILFORD, *Secretary*
Box 426, Wooster, Ohio

The National Arborist Association held a full-day meeting, Monday, August 21, at Syracuse prior to the opening of the 26th National Shade Tree Conference. President Larry Wachtel called the meeting to order at 10:00 a. m. and introduced Joseph A. Dietrich, Superintendent, Division of Parks and Trees, Greenwich, Connecticut, as the first speaker.

Dutch Elm Disease

Mr. Dietrich spoke on the Dutch elm disease control program which is being carried on successfully in Greenwich. The program in Greenwich, which has been on a community-wide basis with private citizens and town officials cooperating fully, has given remarkably good result. Losses from Dutch elm disease have been held to a minimum as compared to the losses in other communities where little or no effort is being made to check the disease. Sanitation and dormant spraying with DDT to prevent beetle feeding were stressed as the effective control measures. Thorough spraying is essential. Mr. Dietrich reported "that about 85% of all elms which broke out with the disease showed initial symptoms in the tops and on the field side of the tree, indicating that in the areas of light application, insufficient time spent in spraying each tree resulted in poor coverage."

In answer to the question, "Shall we lose our elms?", Dietrich answered "yes, if we lack interest in the maintenance and have a defeatist frame of mind; but no, if we continue to give them the care and attention they warrant.

"Sufficient evidence is available to indicate that if a well-organized plan of attack is mapped out, many elms can be saved. This plan, which is used in Greenwich, should include scouting and elimination of contaminated areas, protection of all elm trees by prompt removal of dead trees and weakened wood, a spray program designed to prevent feeding by the elm bark beetle, and also to eliminate leaf-eating insects which cause defoliation and result in weakened trees, and finally a feeding project to invigorate the trees and thereby make them more resistant to attacks from insects and diseases."

Selling

Royal H. Ray, Professor of Advertising, Syracuse Univeristy, spoke on "Mid-Century Marketing of Arborist Services." In emphasizing the importance of letting the customers know what services the arborist has for sale, Mr. Ray said that, even though arboriculture is an old profession, not one home owner in a hundred has any more than the vaguest notion of the qualifications of a highly trained arborist and of the services he offers. More promotional effort by arborists' organizations, as well as by individual arborists are needed to educate the public on the need for tree care service.

Individually, arborists should find personal selling and direct mail methods more productive than the type of advertising employed to market mass distributed products and services. Personal selling and direct mail may be as selective as the arborist wishes. Tree service should be sold for what it will do for the customer. Proper care of his trees will make his home more beautiful; it will make his family life more happy and complete; and, in short, it will serve to make him a man of distinction in his community. Used with the proper degree of restraint and subtlety, such methods of approach are powerful sales arguments.

Individualized tree service, the reputation of the arborist for giving good and honest service, and his public relation in the community will often be more important in competitive selling than price alone.

The pressure of contemporary living, Mr. Ray said, causes customers to demand "package service." The interior decorating and furnishings of a home may be handled through one contact. In general there is not the same package service available for exterior improvement, but as a result of a demand for package service many arborists are finding that offering a complete landscape service is more desirable than tree care alone.

Labor Relations

In speaking on labor relations, Norman Gilbert, Superior Tree Expert Co., Muncie, Indiana, and John Duling, Muncie, Indiana, both emphasized the importance of cooperation and understanding between labor and management. Labor should be informed of the policies and affairs of the company. It is important that the company have the confidence of its employees, and also management must have confidence in its employees.

Industry Statistics

A summary of Industry Statistics covering some phases of the tree-care industry was presented by Paul E. Tilford, Executive Secretary of the Association. The hourly charge for general tree work reported by 97 association members located throughout the country in July of this year was $2.52 per hour. The rate of pay reported for foremen and tree men varied considerably in different sections of the country but the average rates reported were—formen, $1.44 per hour and tree men, $1.22.

Pruning, on the average, constitutes about 37% of the work done by arborists, cabling—5%, fertilizing—9%, spraying — 20%, take-downs — 10%, cavity work — 2%, and other work — 17%.

Annual Business Meeting

At the annual business meeting the evening of August 23, the reports of the following committees were received: Cost Accounting, Albert W. Meserve, chairman; Safety Practices, Karl Kuemmerling, chairman; Finance, Oscar F. Warner, chairman; and Membership, Walter P. Morrow, chairman. The association now has a membership of 162, located in 29 states and the District of Columbia.

The following officers were elected for the ensuing year: President—Walter P. Morrow, Morrow Tree Company, Sewickley, Penna.; 1st Vice-president—Oscar F. Warner, Landscape Forester, Waterbury, Conn.; 2nd Vice-president — Sidney McNeal, McNeal Tree Service, Tiffin, Ohio; Secretary—Gerald Corr, Blume System Tree Experts, Houston, Texas; Treasurer—H. N. Engeldow, Mid-Western Tree Experts, Indianapolis, Indiana; Immediate Past-president—C. L. Wachtel, Wachtel Tree Science & Service Co., Wauwatosa, Wis.; Director — for 1 year, Charles F. Irish, Chas. F. Irish Co., Cleveland, Ohio—for 3 years, Ross Farrens Tree Surgeons, Inc., Jacksonville, Florida. Clyde C. Hartney, Dedham, Mass., on the Board of Directors for 2 more years and Paul E. Tilford, Wooster, Ohio, continues as Executive Secretary.

Honorary Members

For outstanding work, long service, and valuable assistance in the field of arboriculture the following men were elected to Honorary Membership in the National Arborist Association: H. Stevenson Clopper, Sr., Charles Town, West Virginia; Dr. L. C. Chadwick, Ohio State University, Columbus, Ohio; Professor Karl Dressel, Michigan State College, East Lansing, Michigan; and Dr. Ray Hirt, New York State College of Forestry, Syracuse, New York.

Our Growing Street Tree Problem

By William Penn Mott, Jr.
Superintendent of Parks
Oakland, California

Every Park Department that has any responsibility for the care and maintenance of street trees hears repeated, over and over again by irate citizens of the community, "I hate trees, particularly street trees." An analysis of this seemingly paradoxical statement is significant, in that several clues to the solution of the difficult problem of maintaining an adequate street tree program can be brought out.

About one hundred years ago the great migration of people to California commenced. With the discovery of gold at Coloma, people became interested in the great western frontier of the United States. For a while the early immigrants to California were only interested in acquiring wealth by exploiting the natural resources of the state. However, as more and more people came to California, villages grew into towns and towns into cities. The people living in the growing towns and cities soon became desirous of beautifying them by planting trees along the main streets.

Those who took the lead in these beautification projects recalled the Maple and Elm lined streets of their home towns back east. Little did they calculate, in their enthusiasm to plant the cities of California, that the value of land in this great country would so change during the next century that twenty to thirty foot parking areas would disappear from the modern city plan. Nor did they realize that the mild climate of California would greatly change the rate of growth of the trees which they had known on the Eastern seaboard.

And so we find, throughout California, large plantings of trees ill-suited to the conditions found along the streets of a California city. The narrow parking widths, a mild climate, dry summers which encourage trees growing in parkways to seek the water applied to adjacent lawn areas, and an increasing tendency on the part of people living in California to be "sunworshipers" were factors which caused people brought up to like trees, to "hate trees" planted in front of their homes by their well-meaning grandfathers.

Today in California, as in many other locations throughout the country, we are faced with the problem of integrating into an existing, poorly conceived street planting program, a new street tree planting program. The latter program calls for small trees which can be simply and easily maintained; small trees for an aesthetic effect, rather than a utilitarian need; fragrant flowered, colorful trees for beauty; tap-rooted trees instead of shallow, fibrous rooted ones; trees with bright green, shiny foliage; trees with an ascending rather than a descending habit of growth; trees that are tolerant of poor soil conditions and the difficult growing conditions found adjacent to most streets; trees that do not bear large fruit, or preferably no fruit at all; trees that are relatively free of pests and diseases; trees that are long lived. If all of these desirable characteristics could be bred into either a deciduous or an evergreen tree, or both, we would have a street tree which more nearly approaches the requirements of our modern city pattern than the American Elm, Silver Maple, Carolina Poplar, Black Acacia, and Chinese Elm tree used so extensively during the nineteenth century.

The need for plant hybridizers to go to work seriously on this problem is urgent. We cannot continue to plant city streets with trees whose maintenance cost is prohibitive and whose effect is undesirable. In California alone, there is a need right now for over three million street trees with the characteristics mentioned above.

The plant hybridizer has shown his ability to create orchard trees to meet even more exacting requirements than those listed in this paper for street trees. Possibly nurserymen and growers have not, in their desire to fulfill the needs of an expanding horticultural program in California, recognized or taken seriously the potentional new market which exists; that is, to furnish a variety of street trees bred to meet the requirements of our modern cities.

The need for a hybrid tree for street planting is urgent and its production is economically sound. Possibly the only stimulus that is required to set in motion such a program is for this organization to write a detailed set of specifications for a street tree, or trees, to meet the conditions that we know will exist in the modern city of today. We cannot in Oakland, and I am sure the situation is true in many other cities throughout the United States, continue the maintenance of trees planted along our streets which are unfitted for the exacting and difficult conditions in which they must grow. The present economic situation and the high tax rates of most cities make it mandatory, if we are to have a street tree beautification program, that the trees used possess such characteristic that the maintenance cost per tree will

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Entirely too many large trees for economical maintenance and good appearance. Mistakes of this nature adorn streets in every American city. Wider spacing and smaller trees are indicated.
—Photo courtesy, Cleveland Div. of Shade Trees.

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New Developments In Public Relations For Tree Men

By Dr. Harry Wood,
Director, Public Relations Division, Heinrich Advertising Agency, Peoria, Illinois and Editor, TREE ALMANAC.

There are still people who think an arborist is either a man who sets fires to collect insurance, a monkey-tailed Tarzan who lives in tree-tops, or a breeder of queen-bees with the hives.

Yet the arborist's profession has been holding national conferences for 26 years.

And while the leaders of the tree industry grow venerable and white-haired; sick, starved, and misplaced trees can be found in nearly every block of America's major cities, and roving tramps "cure" dying elms with tap water for $5 a squirt.

Somehow the message of the arborists has not been communicated effectively. It isn't only a better selling job or more and better advertising that's needed (though these will help). The need is for the broader types of self-analysis, self-improvement, and then mass-education that go under the term public relations.

It was a good sign that no less than six speakers at the 26th National Shade Tree Conference were asked to speak on various aspects of public relations. Leading tree men and their delegated officers are evidently recognizing the need for more aggressive planned selling. One of the speakers, Harold K. Shellenger, defined public relations in the sound, modern way: "Being good, then seeing that you get the credit for it." His stress on consulting the mirror and the microscope, before using the megaphone, was wise and healthy.

But arborists need more specific suggestions closely related to their own problems.

For example, one renowned tree man said to me: "Heavens! I wouldn't dare advertise. I've got too much business now. Can't get the climbers. Hardly have enough men to take care of my old customers, let alone new ones."

I knew at once that his apparently thriving business was really full of hidden sickness like the neglected trees in his potential customer's yards. What he needed was a public relations program to put price policies, considerate service, employee relations, and consumer education in proper perspective.

Another arborist had a different story: Each Saturday his foremen go to the files and take out orders for tree care sufficient to occupy their crews for the coming week. Some of these orders involving thousands of dollars were originally signed by the tree-owners as long ago as 1945. This man meets the problem of "too much business" by stockpiling it in advance. One result is that his climbers, well-paid and expertly trained, cannot be lured away. They know that five-years worth of business,—their security—is already "on ice" and that new customers are continually augmenting the "future backlog".

How does he do it? I asked him. With great generosity he showed me his books, tools, staff, and contracts. In every case what he revealed demonstrated expert public relations, not only with one, but with all his publics.* I asked him whether I might pass along some of his ideas to the arborist's industry and he agreed. His name is Robert Weakley, well know owner of the Howard Tree Expert Company of Warren Pennsylvania.

*The arborist's publics might be listed as follows:

(1) Present customers.
  Large estate owners.
  Public Utilities and other businesses.
  Institutions such as colleges, churches.
  Small home tree owners.
(2) Potential customers.
(3) General public.
(4) Employees.
(5) The Trade.
  Competing arborists.
  NSTC, NAA, other trade associations.
  Related professions (nurserymen, landscape architects, contractors, architects, florists, spray and equipment suppliers, realtors, insurance companies).
(6) Communication media.
  Local newspapers.
  Local radio stations.
  Trade press of arborist industry (TREES, ARBORIST'S NEWS, TREE ALMANAC, etc.)
  Trade press of related professions.
(7) Institutions and organizations (Boy Scouts, Schools, lodges).
(8) Governmental bodies (Park commissions, foresters, highway departments, state and national conservation departments county agents, etc.)
(9) Labor organizations.

A fully effective public relations program must keep the arborist in favorable contact with all of his publics.

Bob Weakley's public relations program centers in three of his important publics—his employees—his present, and his potential customers. For his workers he provides the best tools he can buy and doesn't kick if they lose a wrench or a rule in somebody's shrubbery. There are plenty more in the shed. Instead of having his men spend a quarter's worth of time tediously cleaning a ten-cent brush, he provides a new one for each day's wound-dressings. He gives his crew-chiefs responsibility and establishes a definite chain of command. He commends good work and takes a personal interest in each individual. Trips to Florida, bonuses covering emergency doctor bills, and other rewards besides wages, come to steady workers.

Another excellent employee-relations program was demonstrated by Karl Kuemmerling, Forester to Public Utilities in Canton, Ohio. His regularly issued house-organ, LEAVES, not only spreads the gospel of good safety practices, but also builds each employee into the business family.

For the second public, present customers, Bob Weakley provides not only expert service, but also highly educational showmanship. For example, when one old lady complained that his screw-rods must be old and weak because they looked so rusty, he gave orders that every iron rod in his stock should be painted with aluminum paint before it was issued to a crew. Future orders were then switched to aluminum rods. Customers like their dressy newness of appearance.

His next step was to design and have custom-made, service trucks with special bins for each kind or size of tool, rope, hook, cable, or other piece of equipment. Against the back of the driver's cab a long, vertical vat was built in. This is kept filled with antiseptic, and after each cut, each pruning saw used is racked in the sterilizing tank. Each crew has one of these well-planned and functional trucks. Not only does this insure efficient, one-trip work, it advertises the professionalism of the service. Bob Weakley is tickled to death every time a customer gets curious and asks why in heck the men keep swapping saws, and pulling new ones out of the dripping alcohol. It gives him an unforgettable chance to show the customer what good care his trees are getting. Bob Weakley keeps his prices high, and makes a point of boosting them every time competitors try to catch up. To do this without rousing price-resistance, he has developed excellent methods of convincing customers of the fairness of his charges. One device is to post time-sheets in the customer's garage. Foremen clearly mark the number of hours worked by each member of the crew, and suggest that the tree-

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POLES APART IN COST AND RESULTS

A spray rig can cover miles of right-of-way speedily and thoroughly.

Hand-cutting crew clearing a right-of-way.

MEN who watch costs have found that chemical weed control and hand-cutting methods are *poles apart* . . . in cost and performance. Dow Weed Killers, used by leading utility companies, have saved *25 to 50 per cent* over hand-cutting or other mechanical methods.

The Dow Chemical Company has developed weed, brush and grass killers that save you money in clearance and maintenance of your right-of-ways. Contact your nearest Dow sales office.

ESTERON BRUSH KILLER, a mixture of low volatility esters of 2,4-D and 2,4,5-T, now contains an acid equivalent of two pounds of 2,4-D plus two pounds of 2,4,5-T per gallon. This product controls woody and herbaceous plants including alder, ash, birch, brambles, cherry, elm, hickory, maple, oaks, osage orange, poison ivy, sumac, willow, and many other species. Assures satisfactory control of most troublesome species on the average right-of-way. Also effective for treating stubs and stumps to prevent resprouting.

ESTERON 245, a low volatility ester of 2,4,5-T with four pounds of 2,4,5-T acid equivalent per gallon. This product controls woody plants in the same manner as Esteron Brush Killer. It is particularly effective on 2,4-D resistant species such as brambles, hawthorn, mesquite, osage orange, palmetto and poison ivy. Also very effective for stump treatment and dormant bark application.

DOW SODIUM TCA 90% controls annual grasses and established perennial grasses including Johnson, quack and Bermuda. Does not present a fire hazard, neither is it poisonous to livestock grazing on treated foliage. Mixes readily with 2,4-D for weed as well as grass control in the same application. Stores well and is easy to handle. At low dosages, it can be used to retard growth without killing, where a light grass cover is desired.

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GRAIN AND SOIL FUMIGANTS • WOOD PRESERVATIVE

LEAF DISEASES

(Continued from Page 10)

mixture, 8-12-100* and lime-sulphur**, 1-40 or 1-50 are effective; further we know that the wettable sulfurs and the fixed (slowly soluble or so-called proprietary) coppers are in general effective when used according to the manufacturer's directions. They may not stick as well as Bordeaux mixture, but they do not make the leaves so unsightly as Bordeaux mixture nor do they injure the leaf tissue so severely as lime-sulphur. Also they are less offensive than the latter.

Working in cooperation with Mr. Fenner during the past few years on the control of elm leaf spot and the black spot of hawthorn, we have found that Puratized, Standard Agricultural, an organic mercury fungicide, was as effective as a copper fungicide in the control of elm leaf spot and outstandingly better than the copper for the control of the black spot of Paul's scarlet hawthorn. We obtained good control of elm leaf spot with the organic mercury, where infection was heavy on unsprayed susceptible trees.

* 8 Pounds Copper Sulfate
12 Pounds Fresh Hydrated Lime
100 Gallons Water Properly Mixed
** 1 Gallon Liquid Lime-Sulfur
50 Gallons of Water

An additional favorable feature of Puratized, Standard Agricultural is that it does not discolor the foliage, nearby buildings or automobiles when used at the concentration recommended by the manufacturer. This is a feature very important to the arborist.

A few additional points concerning the elm leaf spot disease. Individual elm trees vary in their susceptibility. This should be taken into consideration when it is necessary to spray for the diseases. A census should be made the previous August or September to record the susceptible trees, then the following spring only those trees need be sprayed.

As in orchard spray practice, thorough coverage is necessary to obtain the maximum reduction in disease incidence.

Following a practice started in Lansing by Mr. Fenner, spray applications were made between midnight and daylight. At this time the traffic is at a minimum and as a rule there is no wind so that all of the spray material can be applied to the trees.

This same plan can be followed for most of the leaf diseases caused by parasitic fungi. There are exceptions, which can be illustrated by sycamore anthracnose. Here is a fungus which also attacks the branches. It is advised to prune out diseased branches and spray according to the plan just given. However, pruning out diseased branches is a hopeless job, especially with sizable trees. Dr. Welch and others have recom-

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mended that a dormant application of a fungicidal spray be made to kill spores which are produced in abundance on the diseased branches.

Sycamore trees show individual differences in susceptibility to the anthracnose fungus and it seems that this fact can be taken into consideration while the trees are still growing in the nursery. Selection for planting of those trees which do not show an excess of angular branching and broom-like twigs, but which have straight branching will eliminate the more susceptible trees.

Paul's scarlet hawthorn is very susceptible to the black leaf spot disease. There appears to be no variation in susceptibility between individual trees. This is perhaps because it is a vegetative selection of the English hawthorn and all individuals have come from a single vegetative clone. In our control studies in Lansing, Mr. Fenner and I found that better control was obtained with the organic mercury than with a copper fungicide. However, by July 21, this past summer there was considerable leaf spot apparent. A fourth application was made at this time. As a result there was still half a crop of leaves on the sprayed trees on September sixth, while unsprayed trees had lost their entire crop of leaves by mid-August. We believe that we are making distinct progress in working out a satisfactory control of this disease.

Horse chestnut leaf blotch, tar spot of maple, white oak anthracnose, hickory leaf spots, maple anthracnose and other fungous parasitic leaf diseases can be treated in the same way outlined for elm spot control with considerable assurance of success in preventing severe leaf injury by disease.

II. NON-PARASITIC DISEASES

A plant lives in the soil and in the air. Many diverse things can take place in these two media which may be detrimental to the normal growth requirements and well being of this plant. These adverse conditions in the soil and atmosphere are the causes of the non-parasitic, physiological, or non-infectious diseases, injuries or troubles.

They must be treated in an entirely different manner than the parasitic diseases or troubles which have just been discussed. The remedial measures consist of the removal of the injurious influence, or chemical; adding the deficient nutrient; or in brief, correcting the adverse condition. The treatment, whatever it may be, is a remedial or curative type rather than the protective type which is necessary in the treatment or parasitic leaf diseases.

A listing of some of the leaf injuries which result from non-parasitic causes presents quite a picture and serves to emphasize how numerous and how diverse they seem to be;

(Continued on Next Page)

John BEAN SHADE TREE EQUIPMENT

CONTROLLED PERFORMANCE

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Only Bean Rotomist has **pre-atomization**—the scientific, controlled method of assuring effective spray application at **all** rates of discharge.

Air velocity of over 150 miles per hour is required to thoroughly atomize spray concentrate to the most effective micron size . . . yet to discharge a spray mist at this hurricane velocity would blow leaves off the trees.

Rotomist solves the problem by pre-atomization of concentrates in a 240 mile-per-hour air stream with a powerful auxiliary blower. This controlled mist is then projected into the main air stream where it can be mixed with dry dust or discharged alone at the velocity of 90 miles-per-hour.

Pre-atomization means maximum efficiency in use of spray materials . . . no droplets so fine that they will not deposit on foliage, and none so large that they will cause wasteful run-off.

The John Bean line includes high pressure sprayer models with outputs to 60 gallons per minute at pressures to 800 lbs. And, for hard-to-reach areas, back yards, etc., there are portable John Bean sprayers and concentrate applicators. Write for complete information on John Bean specialized shade tree and pest control equipment.

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John BEAN LANSING 4, MICHIGAN

DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION

Leaf scorch — Unseasonable discoloration of leaves.

Late winter drying of conifers—Sudden defoliation.

Leaf wilting—Late frost injury.

Leaf chlorosis (or yellowing) — Chemical fume or gas injury.

Leaf mottling (or mosiac)—Injuries from excess of chemical salts in the soil. Injuries from deficiencies of nutrient chemical salts in the soil.

Let us take up for consideration a few of these troubles, see what the diagnostic symptoms are and determine what remedial measures should be applied, and what complications may be involved. Determination of the cause or causes is again the first and basic necessity.

A hard maple has an injury to its leaves. There is a browning of the tissue around the edges and down between the veins. These dead areas are farthest from the midribs and main veins. These symptoms seem to be clear cut and the injury is diagnosed as leaf scorch. The probable cause is a lack of sufficient soil moisture, in brief, drought injury.

Confirmation of this can be made by examination of the soil to a depth of about 2 feet, using a soil auger or a shovel. Dry soil clinches the diagnosis. In my experience this type of injury is the most prevalent and wide spread trouble with our shade trees. Although maples are most commonly affected, all of our shade trees are subject to this injury.

Remedial measures are well known; a good soil soaking watering. Sufficient water should be applied to the soil that it soaks into the soil to a depth of at least 2 feet. Slow application is necessary so that it all soaks into the soil with no run-off waste. Subsequent waterings throughout the summer may be needed. These should be made at about two week intervals, to permit normal aeration of the soil between waterings.

Now suppose the soil is found to be quite moist. There appears to be plenty of soil moisture. Complications have entered into an otherwise clear and simple diagnosis. The record of the weather conditions must be studied from the previous few weeks. Perhaps there has been a period of unseasonable high temperatures, or there has been a day of very high winds. This may account for the leaf scorch because excessive evaporation of water from the leaves has been greater than the transpiration stream could supply to the leaves from the roots, and the tissues farthest from the main leaf veins have died from dessication. Because of their thin structure and broad expanse, maple leaves often suffer from this form of water deficiency.

Again the leaf scorch appearance of the leaves may be the result of injury to the roots. Dying of roots or their being cut off in ditching operations will reduce the water absorbing or water intake area.

Another complication which enters into the simple scorch case, is that of nutrient deficiencies. The leaf scorch condition being the last stage in the leaf injury which earlier appeared as distinct yellowish or other colored areas and later becoming brown.

Information is sought from the orchardist in an effort to determine by the symptoms just what nutrients are deficient. Unfortunately we cannot get much help and must resort to the "shotgun" treatment—application of a complete commercial fertilizer in the hope that it contains the needed chemicals.

The foregoing is the picture of what is usually considered a simple and easily recognized non-parasitic tree trouble, with some features which may change it into a more complicated problem.

Now let us discuss another disease known as chlorosis. If a pin oak tree is planted in a soil which is quite alkaline, or which has a high pH of 7.0 or more, the leaves will soon develop a sickly yellowish color, brown spots may appear between the veins and dying of leaf tissue around the edges of the leaf may occur. A typical chlorotic condition is present. Usually the soil with the high pH is found to contain considerable amounts of calcium or lime. In such cases the iron salts present in the soil are converted into an insoluble form. All leaves require minute amounts of iron salts for the normal production of the green pigment, chlorophyll.

Lack of chlorophyll prevents the manufacture of sugars from carbon dioxide and water and the food reserves are reduced, growth is retarded and the affected tree is indeed sick. The leaves become pale yellow in color and we diagnose the trouble as lime-induced chlorosis caused by the unavailability of iron salts. Sometimes there actually may be a deficiency of iron salts in the soil but this is rare.

The obvious control or remedial measures to use are those which will lower the pH of the soil to a point below pH 7.0 under which conditions the iron will be again available in the salt form and can be taken in through the feeding root hairs.

Application of sulfur, ammonium sulfate and aluminum sulfate or combinations of these to the soil will lower the pH of the soil and make it more acid. As the change in soil reaction may require some time, spraying the foliage annually with iron salts (Iron sulfate (copperas) 5 pounds, Soybean flour (for sticker) 2 pounds, Dreft(spreader) 2 ounces, Water 100 gallons).

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PUBLIC RELATIONS

(Continued from Page 14)

owner check any discrepancies at the end of the each day. When the job is finished the time-sheet is left hanging on the wall. Later, when the customer gets his invoice, inclosing a duplicate time-sheet, he may compare notes if he wishes. Or, if the time-sheets show costs mounting beyond expectations, he may choose to take advantage of a clause written into every customer-contract, indicating that owners may call workmen off the job at any time before or during operations. This businesslike and systematic method aids in collections and leaves the customers proud of the high-quality work they have obtained.

When the work is finished each tree is tagged with a numbered brass check on a single nail. Complete data on every tree once serviced is filed and added to when the tree is fed, aerated, sprayed, pruned, or repaired.

Along with present customers, Bob Weakley takes a great personal interest in developing new clientele. To make sure that tree owners understand the needs of their trees, he frequently saddles up horses and takes them on an inspection tour through the acres of woodland around his lodge outside of Warren. "This is my tree laboratory" he tells them, explaining the results of different methods of insect and fungus control, pointing out various tree injuries and experiments. His guests learn a lot about trees. They enjoy the horses. Then he takes them back to his lodge-office and shows them enlarged paintings of aphids. hoppers, beetles, and other pests. Usually he gets a new customer out of this process.

When he reads in the newpaper about the death of a husband or wife on an estate with many trees, he calls upon the bereaved person a few days later and inquires whether a memorial gift rod on a choice tree would be welcome. From the rod, suspended on a chain at eye-level, an engraved disc would bear the words: "This tree is dedicated to the memory of . . ." The name of the arborist does not appear on the tag. But it frequently appears on the heart and lips of the tree-owner thereafter.

Prolonged, year-after-year tree-interest on the part of the tree-owning public is another cornerstone of Bob Weakley's well-rounded public relations program. For this purpose he uses direct mail advertising, echoing the advice of advertising Professor Royal Ray to the National Arborists Association meeting in Syracuse, to the effect that, of all the form of advertising, direct mail is the "best and most selective" for tree men.

In the field of direct mail advertising, the newest development in the arborist industry is the TREE ALMANAC, an envelope-size monthly publication carefully tailored to rouse widespread reader-interest. It is new in several important ways:

First, it tells its story in everyday layman's terms, rather than in scientific lingo comprehensible only to arborists.

Second, it is highly departmentalized for quick, easy reading, yet it has enough "meat" in it that it can do the job of educating the public about trees effectively.

Third, it offers a variety of features of interest to every age group and every member of the family. It fits into a home situation for home readers, rather than into a desk-type or office situation. One dramatic narrative each month features the story of how an arborist played a part in restoring the health of threatened trees.

And fourth, it is attractively composed and illustrated, printed in green and brown in the popular American tradition which goes all the way back to Benjamin Franklin's Poor Richard's Almanac. Men will especially like the cartoons and jokes. While women will be appealed to by the decorative leaf-patterns, the colorful tid-bits of information, and quiz questions.

One especially significant feature of the publication is the section devoted to the National Junior Foresters. This organization, which any child may join by signing the attractive membership pledge which his arborist may provide for him, will, in effect, turn a whole generation of American youngsters into spotters and minute-men for the nation's trees. The wholesome effect on tree-owning parents, as well as on the boys and girls themselves, will pay off in increased tree business. This has been amply demonstrated in Omaha, Nebraska, where Frank Pipal founded and developed his Junior Foresters. Some features of the national organization are modeled on his, with his encouragement, but certain parts of his program are omitted, such as instruction in amateur pruning. The emphasis is placed, rather, on training children to be good tree observers, and to rely on arborists for actual tool-handling. Instruction sheets have been prepared, available on request, to suggest to any interested group of boys and girls how a local chapter of the national group may be organized. This will furnish a rich source of publicity stories and potential clientele for any arborist who encourages local leadership to adopt the project.

The TREE ALMANAC will offset one of the perennial bedevilments of the arborists industry—its highly seasonal nature—in a carefully planned way. By continuously calling attention throughout the winter months to winter-time services that may be performed by arborists, it will expand the types of work called for by customers, and increase the total yield per job. It will make a pleasant, monthly contact with customers whom the busy arborist could never find time to call on personally. A dealer imprint appears on page one.

The TREE ALMANAC is issued in Peoria, Illinois, by the Hanbury Wood Publishing Company. Frank Hanbury, who has been an arborist in that area for more than 30 years, and who at one time worked as many as 380 men on tree crews, is one of the men behind the publication. His thorough knowledge of the tree business and his consistent plugging for expanded public relations for the tree industry, are known to all members of the NSTC, of which he is a 26-year member. The first issue will be available for mailing before Jan. 1, 1951, but a sample run has already been printed. Exclusive franchises will be given in any territory if requested.

With an aroused interest in the tree-owning public to fall back on, more and more newspaper editors, city councilmen, legislators, and scientists will join the arborists' profession in preserving the health and beauty of America's trees.

Sophora Tree Source of Atomic Drug

Washington—Victims of atomic radiation could receive untold benefits from a new drug called rutin, according to officials of the Agriculture Department, which perfected it.

Rutin protects a patient from harmful effects of rays, the department said. In general it is useful in diseases involving weakened capillaries, a condition usually associated with high blood pressure. Doctors have used rutin to lessen the severity of hemophilia and hemorrhage of the eye and to prevent gangrene in frostbite cases.

The drug was developed from green buckwheat at the department's research laboratory in Philadelphia. However, much of the *present supply comes from a Chinese plant called Sophora japonica, (Chinese Scholar tree), which contains more rutin than buckwheat does.*

Fifteen chemical manufacturers now are processing plants into dried meal and 75 concerns producing rutin tablets. Some tablet makers continue to insist on buckwheat meal as a base because the areas where the Chinese plant grows are under Communist control.(?)

Record Set In Chain Saw Contest At N. Carolina Farm and Home Show

A new record for two-man chain-saw cutting was established at the North Carolina State College Farm and Home Show (Aug. 1-3) when a crack pulp cutting crew made three consecutive bucking cuts through a 20-inch pine log in the total elasped time of 35 seconds.

Using a smooth-cutting, 12 horsepower heavy-duty Disston the team of Johnny Nunnery of Vance County and Ben Boney of Lenoir County, North Carolina, outstripped all competitors in the colorful contests that were a feature of the 42nd annual State College show.

The Nunnery-Boney team set their mark under a scorching mid-afternoon sun, with the temperature in the high nineties. Pitted against them was the team of Walter M. Keller and Tommie Owen, both of Wake County, who had entered the finals after distancing other crews in the previous day's eliminations.

A delighted crowd saw the Nunnery-Boney duet take a commanding lead on the first cut after Raleigh City Councilman J. F. Correll dropped the starting flag. With Nunnery on the power end, the smooth-working team were half-way through their second cut before Keller and Owens drove through on their first. The lead increased steadily as Nunnery, handling the big Disston with knowing skill, sheared through the third cut as timer Simmons Andrews, Farm Page Editor of the Raleigh *News & Observer*, clocked the effort at 35 seconds. The Keller-Owens teams finished a willing but distanced second in 51 seconds.

McCulloch "Earth-Drill"

The "Earth Drill," just announced by McCulloch Motors Corporation of Los Angeles, is a radical new 5-h.p., gasoline-powered post-hole digger reported to be capable of drilling at a high rate of speed in any type of earth or clay. It is completely portable, requiring no tractor or vehicle for its operation.

An unusual feature of the Earth Drill is that it can be converted into a standard McCulloch chain saw in less than a minute, since the engine is the same unit used on this well-known make of timber saw. Conversion consists merely of detaching the drill assembly and attaching a chain saw assembly.

Weight of the two-man Earth Drill complete with 6-inch auger is only 79 pounds. A full-swivel coupling at the engine permits the auger to drill at any desired angle, and makes it possible to reverse the rotation of the auger if desired. Other interesting features are: centrifugal clutch that automatically disengages the auger at idling speeds; kick-proof automatic-rewind starter; diaphragm carbureter to permit full-power engine operation in any position; and one-control operation.

Augers of 6, 9, and 12-inch diameter are currently available. The Earth Drill is sold in the United States and Canada through McCulloch dealers, either as a complete unit or as an attachment for Model 5-49 or 1225 McCulloch chain saws already in use. Chain-saw attachments, with blades from 20 to 60 inches, for use with the Earth Drill can also be obtained separately. Price of the Earth Drill, without auger, is $370.00, f.o.b., Los Angeles.

ROPE HEADQUARTERS

We have in stock Plymouth and New Bedford Rope in all sizes, both treated and untreated Manila. Also all kinds of twines for tying tree balls.

Normal stock of Lags, Screw Rod and other steel items.

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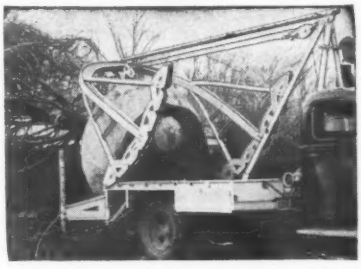

Quickly installed on any truck, this patented tree mover rocks back for easy loading or unloading . . . rocks forward for balanced load on truck. Power winch does the work. Handles up to 7-ft. ball, 5 tons. Two sizes available. Hundreds in use. Write for details.

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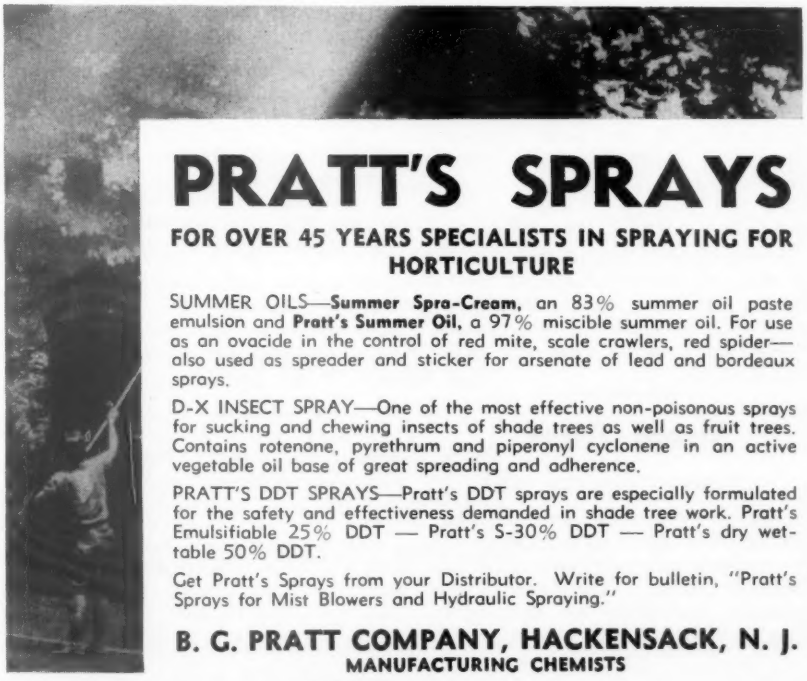

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D-X INSECT SPRAY—One of the most effective non-poisonous sprays for sucking and chewing insects of shade trees as well as fruit trees. Contains rotenone, pyrethrum and piperonyl cyclonene in an active vegetable oil base of great spreading and adherence.

PRATT'S DDT SPRAYS—Pratt's DDT sprays are especially formulated for the safety and effectiveness demanded in shade tree work. Pratt's Emulsifiable 25% DDT — Pratt's S-30% DDT — Pratt's dry wettable 50% DDT.

Get Pratt's Sprays from your Distributor. Write for bulletin, "Pratt's Sprays for Mist Blowers and Hydraulic Spraying."

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Authors and Books

The following books may be ordered from TREES Magazine, Box 5607, Cleveland, Ohio.

FOREST PRODUCTS, by Nelson C. Brown. John Wiley & Sons, Inc., New York. 399 pages, illus., $5.00.

Forest Products is based on Mr. Brown's *Timber Products and Industries*. It emphasizes fundamental principles, describes both the technical processes and the developments within each industry, and points out the economic problems involved.

The book begins with a review of the history, economics, statistics, and of methods of cutting in the woods. It also shows the relationships and applications in the various phases of forestry. These should be understood before going on to the main part of the text—a concise summary of each product, providing a guide to the business potentialities of forestry.

Some of the important developments and influences covered in *Forest Products* are reduction of woods waste by prelogging, relogging, and salvage logging . . . chemical utilization such as wood alcohol and sugar, plastics, and rayon . . . manufacture and processing of veneers, plywood, pulp and paper products, densified wood, and fiber boards . . . miscellaneous products such as Christmas trees, athletic goods, and pres-to-logs . . . profitable utilization of mill waste such as bark, sawdust, and shavings.

In adidtion to its other advantages, *Forest Products* features 155 outstanding illustrations representing modern developments, a glossary of terms, and a reference list citing recent publications on many of the specialized topics covered in the book.

D. E. D.

(Continued from Page 11)

its elms. The three Pelham villages combined have lost five per cent and Mount Vernon six per cent. In other words, they still have 95 per cent of their elms.

Any city or village can obtain the same results if the local interest is directed at saving money by spraying elms.

* * * *

Reprint No. 87 from New York State Conservationist. For additional copies of this reprint (available in limited quantity) write, giving reprint number, to Division of Conservation Education, N.Y.S. Conservation Department, Albany 7, N. Y.

Street Trees

(Continued from Page 13)

not exceed twenty-five cents per year. This figure is not at all unreasonable if we can secure trees hybridized for use along city streets. The figure is unreasonably low if we are thinking in terms of using the type of trees which we have been accustomed to plant in the past.

Unless we recognize this fact the majority of the people in our city will continue their cry of "I hate street trees" and our program of street beautification will go down to defeat, if for no other reason than economic impossibility. Let's not allow this situation to become real because of our unwillingness to do something about our growing street tree problem; that is "Trees unsuited for planting along our modern city streets." Let's challenge the hybridizers and growers to produce street trees with the desirable and exacting characteristics which trees must have to meet the economic and cultural conditions of our cities of today and tomorrow.

Smaller Ornamental Shade Trees For Landscaping and Streets

The trend toward the ranch-type house increases the demand for medium-sized trees, says L. C. Chadwick of the Department of Horticulture of the Ohio Agricultural Experiment Station. The small, flowering trees, such as the Flowering Crabapples, Dogwood, and Redbud, certainly have a place in most landscape plantings, but there is also a need for the medium-sized trees of 30 to 40 feet in height.

Chadwick lists six trees with a few of their outstanding characteristics in this category:

Acer tartaricum—Tartarian Maple is a native of Europe and Asia having attractive red winged fruits and foliage turning yellow in the fall.

Aesculus carnea briotti—Ruby Red Horse Chestnut is of hybrid origin having bright scarlet flowers.

Carpinus caroliniana — American Hornbeam, which is a native from Eastern and Central United States, is a slow grower and free from pests. It has a good orange to scarlet color in the fall.

Cladrastic lutea—American Yellowwood is a native from North Carolina to Kentucky and Tennessee. It has showy white flowers in drooping clusters and yellow fall foliage.

Ostrya virginiana — American Hophornbeam, native of Eastern United States and Canada, has attractive foliage and habit of growth and also free from pests.

Zelkova serrata — Japanese Zelkova, native of Japan, has attractive branching habit, bark, and foliage. It also is free from pests and resistant to Dutch elm disease. It belongs to the Elm family.

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